



Regulation of Smooth Muscle

PROGRESS IN SOLVING THE PUZZLE

September 24-26, 1990

Organizing Committee:

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May 24, 1990

Dr. Harmon C. McAllister
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Dear Dr. McAllister,

On September 24 - 26, 1990, The Graduate Hospital will hold its Sixth Annual Research Symposium entitled "Regulation of Smooth Muscle: Progress in Solving the Puzzle". As you are well aware, control of smooth muscle function is the final step in the regulation of numerous organ systems including the gastrointestinal, the urogenital, and the cardiovascular systems. Possibly even more important is the fact that changes in the control of the smooth muscle cell have been implicated in nearly all pathophysiological states involving these systems. Unfortunately, little is known concerning the basic mechanisms regulating this important muscle cell. Before scientists can develop therapeutic agents to treat the disease states that involve smooth muscle, we must fully understand the normal, basic regulation of this cell.

This basic understanding of the smooth muscle cell is the first goal of this symposium. We have developed an excellent program with which to reach this goal. The symposium will examine regulation of the smooth muscle cell from the individual contractile proteins to the changes that occur in various smooth muscle tissues in a disease state. This approach will allow complete integration of the information obtained at the various levels of investigation. The program will contain five sessions for presentations by the invited speakers and several sessions for poster presentations by the participants. The program has been designed to explore and integrate the most recent advances in: 1) Smooth muscle contractile proteins; 2) Skinned smooth muscle fibers; 3) Intact smooth muscle fibers; 4) Calcium mobilization in smooth muscle; and 5) Adaptation of smooth muscle.

A second important goal of this symposium is to obtain a complete understanding of the mechanism(s) involved in the coupling of membrane stimulation with the appropriate calcium dependent response of the cell. The smooth muscle cell is an excellent model with which to examine these phenomena. The response of this cell to membrane stimulation includes G-proteins, formation of inositol trisphosphate, activation of protein kinase C, increases in adenylate cyclase and phosphodiesterase activity, and mobilization of calcium from both intracellular and extracellular sources. Because these responses are important in almost every cell in the body, the information gained from the study of smooth muscle can be readily incorporated into the investigations of other tissues. The speakers for this symposium include some of the leading experts in area of signal transduction and therefore stimulus-response coupling. As such, the